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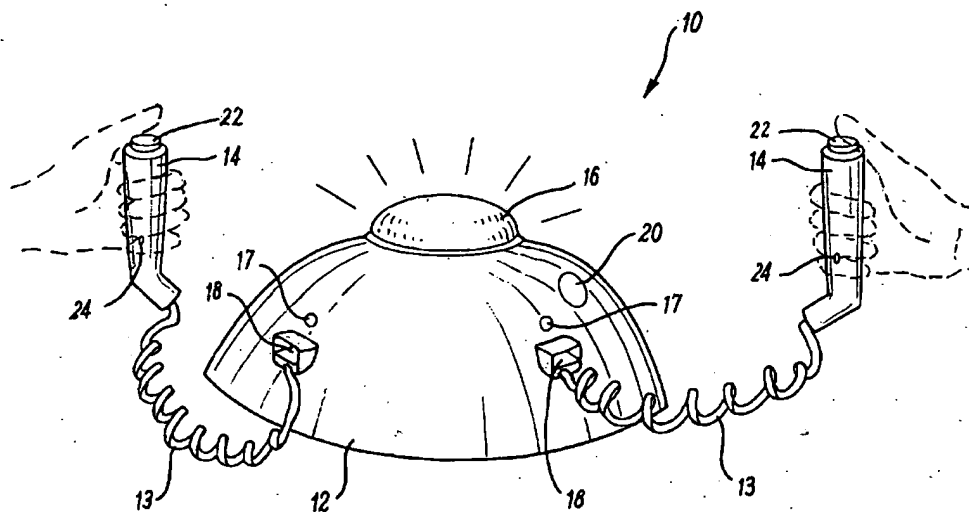
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(54) Title: **GAME-PLAYING APPARATUS, AND IN PARTICULAR GAME-PLAYING APPARATUS INCORPORATING ELECTRIC SHOCK MEANS**



(57) Abstract: The apparatus (10) compares the ability of multiple players to perform a physical task, and administers a disincentive, for example a measured electric shock to one or more unsuccessful players. In an example, the apparatus comprises a number of handsets (14) with input devices (22). The apparatus compares reaction time of a plurality of players from a start signal, and administers an electric shock to the players with slower, or the slowest, of reaction times via the handset.

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1 Game playing apparatus, and in particular game playing
2 apparatus incorporating electric shock means
3

4 The present invention relates to game playing apparatus,
5 and in particular to apparatus for playing a competitive
6 game with a plurality of players.
7

8 Competitive games are extremely popular between friends
9 or competitors that are more serious. Regardless of
10 whether or not the game is played for fun, a competitive
11 element enhances the playability of the game and indeed
12 improves performance of the players. Pride of the
13 players is no doubt a contributing factor to the
14 playability of competitive games, as the players will
15 tend to prefer to win rather than lose. However, it is
16 often desirable to provide an additional incentive for
17 the player to win the game, in order to improve the
18 element of competition and the rate of player
19 improvement. Such an incentive can be a positive
20 incentive in the form of a prize to the winner.
21 Alternatively, the incentive can be negative, i.e. a
22 disincentive in that the losing player is disadvantaged
23 in some way. Typical examples of these incentives
24 include dares or forfeits. In many situations, prizes or

1 positive incentives are not readily available, and
2 therefore disincentives are more often
3 applied. This partially explains the popularity of games
4 involving forfeits and dares.

5

6 It may be desirable to provide a physical or tangible
7 disincentive to a player, rather than a psychological
8 disincentive such as a forfeit. This is apparent from
9 the nature of playground games such as "raps" during
10 which the loser is subjected to blows on the knuckles
11 with a pack of cards. However, such games typically
12 involve little or no skill level and are based on chance
13 alone. In addition, physical punishment of the type
14 described is liable to cause injury and/permanent damage
15 to the recipient of the punishment.

16

17 It would therefore be desirable to provide apparatus for
18 a competitive game between two or more players, capable
19 of applying a disincentive to one or more losing players
20 in a manner that does not injure those players.

21

22 The principle of using a measured electric shock to
23 deliver injury free pain is well-known. For example,
24 novelty products are available that deliver electric
25 shocks. These include everyday items such as pens and
26 lighters that may be armed by one person and later
27 handled by a second person that receives an electric
28 shock when touching the item.

29

30 In addition, game controllers for video gaming consoles
31 including the provision for delivering an electric shock
32 to players during game play have been proposed. However,
33 these controllers do not inflict pain; rather it is

1 designed to induce low level muscle spasm to the player
2 in order to create a tangible/tactile sensation during
3 game play. This controller, by definition, requires the
4 use of complex and expensive games consoles, additional
5 related hardware, and software.

6
7 Further available apparatus includes an arcade machine
8 that allows a player to test his or her tolerance of
9 pain. Although such machines are often marketed as
10 "electric chairs", they in fact use high frequency
11 vibration to induce a sensation to the player similar to
12 an electric shock. Typically this apparatus is for a
13 single player, and generates increasing levels of pain
14 until the player concedes. Although the level reached
15 can be recorded, there is no element of direct
16 competition between players.

17
18 Additional existing apparatus includes a form of
19 roulette, in which up to four players insert fingers into
20 sockets on an apparatus, with one player randomly chosen
21 by the apparatus to receive an electric shock. This
22 apparatus lacks an element of competition and skill.

23
24 According to the first aspect of the invention there is
25 provided gaming apparatus for a plurality of players,
26 comprising: comparison means for comparing the
27 performance of a task by a plurality of players and
28 determining; means for administering a disincentive to
29 one or more of said players.

30
31 Preferably, the disincentive is a tangible disincentive
32 in the form of injury-free pain.

33

1 More preferably, the disincentive is a measured electric
2 shock.

3

4 The apparatus may include a plurality of contact elements
5 adapted to be attached to or held by a player.

6 The contact elements may comprise a handle.

7

8 The apparatus is preferably adapted to administer a
9 disincentive via the contact elements. Preferably, the
10 contact elements include an electrode for administering a
11 measured electric shock to a player.

12

13 The gaming apparatus may include a housing enclosing the
14 comparison means.

15

16 The apparatus may include a plurality of player input
17 devices, operable to be activated by a player and provide
18 a signal to the measuring and comparing means.

19 Preferably, the player input devices are provided on the
20 contact elements.

21

22 Preferably, the apparatus includes a signal output device
23 for indicating to the players commencement of a game.

24 The signal output device may comprise a display.

25 Alternatively, or in addition, the signal output device
26 may comprise an audio device.

27

28 Preferably, the apparatus is adapted to compare reaction
29 time of the players. More preferably, the apparatus is
30 adapted to administer a measured electric shock to a
31 player determined as having a slower reaction time than
32 another player.

33

1 Preferably, the apparatus is adapted to provide a start
2 signal to the players, and compares reaction times of the
3 players by comparing the elapsed time between the time of
4 the start signal and the receipt of signals from the
5 respective player input means located on the contact
6 means.

7
8 The apparatus may be adapted to determine the slowest
9 reaction time, and administer a disincentive to the
10 player via the corresponding contact means.

11
12 Alternatively, the apparatus may be adapted to determine
13 the fastest reaction time, and administer a disincentive
14 to the remaining players via the corresponding contact
15 elements.

16
17 According to a second aspect of the invention there is
18 provided apparatus for playing a competitive game between
19 two or more players, the apparatus comprising a plurality
20 of contact elements adapted to be attached to or held by
21 a player, a plurality of player input devices adapted to
22 measure a players performance of a particular physical
23 task, comparison means for comparing the relative
24 performance of the players at said physical task, and
25 means for administering a measured electric shock to at
26 least one player determined to be less capable of the
27 physical task.

28
29 Preferably, the physical task is reaction time.

30
31 According to a third aspect of the invention there is
32 provided a method of improving reaction time of
33 individuals, comprising the steps of indicating a start
34 time to a plurality of individuals; comparing reaction

1 time of the individuals relative to one another; and
2 administering a measured electric shock to at least one
3 individual determined to have a lower reaction time
4 relative to at least one other individual.
5 There will now be described, by way of example only, an
6 embodiment of the invention with reference to the
7 following drawings, of which:

8

9 Figure 1 is a perspective view of apparatus
10 according to an embodiment of the
11 invention;

12

13 Figure 2 is a view of internal components of a
14 handset according to an embodiment of
15 the invention;

16

17 Figure 3 shows schematically the operation of
18 the apparatus of Figure 1;

19

20 Figure 4 is a perspective view of an
21 alternative configuration of
22 component parts.

23

24 With reference firstly to Figure 1, there is shown game
25 playing apparatus generally depicted at 10 comprising a
26 housing 12 and a pair of handsets 14 connected to the
27 housing 12 via cables 13. The housing 12 is preferably
28 made of plastic, and contains the internal components of
29 the apparatus, which will be described below.

30

31 The housing comprises a display 16, containing light
32 emitting diodes (not shown), and additional LEDs 17
33 corresponding to the handsets 14. The handsets may be
34 removably mounted in sockets 18 when not being used.

1
2 The housing is also provided with a selection switch 20
3 for selecting which handsets are operational. Although
4 not shown, the base of the housing is provided with a
5 loudspeaker grille, a battery access panel, and plastic
6 suction pads for reducing slippage of the apparatus on a
7 surface.

8
9 The handsets 14 have moulded plastic casings, and are
10 provided with player input devices 22 in the form of
11 electronic switches, and electrodes 24.

12
13 Figure 2 shows a handset 140 having its casing separated
14 to show internal components. It should be noted that
15 although the shape of the handsets 14 and 140 shown in
16 Figures 1 and 2 are different, the functional components
17 are identical.

18
19 The handset 140 comprises a first part-casing 141 and a
20 second part-casing 142 of moulded plastic material.
21 Corresponding bores 144 are provided in the part-casings
22 for receiving fixings to secure the part-casings to one
23 another.

24
25 The handset 140 is provided with a player input device
26 22, consisting of an electronic switch 148 and a switch
27 cover 146. The switch 148 is connected to the housing
28 via wires 149 that form part of the cable 13. The wires
29 149 are adhered to the interior of the casings by
30 adhesive 151. The wires 149 carry an input signal from
31 the switch 148 to the housing 12.

32
33 The handset also contains electrodes 24 mounted such that
34 they extend through the casing wall, and are contacted by

1 the player during use. The electrodes are connected to
2 the apparatus by wires 153, which are connected to the
3 housing as part of the cables 13. The wires 13 carry a
4 measured electric shock from the housing to the handset.

5
6 Figure 3 shows schematically the interaction of component
7 parts of the apparatus. The apparatus includes four
8 handsets, shown as 14, each comprising an input device 22
9 and an electrode 24. The handsets are connected to the
10 controlling electronics 30 of the apparatus via wires 149
11 and 153. The electronics 30 include the timing circuitry
12 and circuitry capable of comparing the relative times of
13 received input signals. The controlling electronics may
14 include integrated circuitry.

15
16 The controlling electronics is also capable of
17 administering a controlled electric shock to a player via
18 electrodes 24. This could be achieved by the discharge
19 of a capacitor across the electrodes.

20
21 The electronics 30 are coupled to an appropriate power
22 supply, such as a battery. Also connected to the
23 electronics 30 are the devices located in the housing 12.
24 These include the display 16, the LEDs 17, the selecting
25 switch 20, a loudspeaker 19, and a start switch 23.

26
27 In use, two to four players take a handset 14. The
28 selection switch 20 allows the players to select which
29 handsets are operational. This can be achieved by
30 pressing the selection switch, each depression moving
31 through a cycle of handset combinations. If four players
32 are competing, then all the handsets must be operational.
33 If less than four are competing, then the system must be
34 told which handsets are not used in order that a valid

1 comparison can be conducted. The operational status of
2 each handset is indicated by the corresponding LED 17.

3

4 When all players are ready, one of the players depresses
5 the start switch 23. Conveniently, the start switch 23
6 can be formed as part of the display 16. In response to
7 the input from the start switch 23, the apparatus
8 provides a preliminary signal to the players indicating
9 that the game has commenced. The preliminary signal is
10 preferably audible via the loudspeaker 19, and visible
11 via the display. In one embodiment the signal sounds as
12 a warning signal.

13

14 After a time determined by the apparatus, a start signal
15 is output to the players. As with the preliminary
16 signal, the start signal can be audio-visual via the
17 display 16 and the loudspeaker 20. The time between the
18 start of the preliminary signal and the start signal is
19 selected by the apparatus with a degree of randomness,
20 although there may be predetermined upper and lower
21 limits to the "preliminary time".

22

23 After the start signal commences, the players respond by
24 entering an input signal via switches 148 on the handsets
25 14, by depressing switch cover 146. The players depress
26 the switch cover 146 as quickly as they can after the
27 start signal has commenced. The elapsed times between
28 the start time and receipt of the input signals from the
29 respective handsets are compared by the controlling
30 electronics. The apparatus determines from which handset
31 the slowest reaction occurred. In response, the
32 apparatus administers a measured electric shock to the
33 electrodes on that handset, which is felt by the player
34 as an injury-free pain.

1
2 In an alternative embodiment, the apparatus could
3 administer measured electric shocks to all of the players
4 other than the one with the fastest reaction time. A
5 further alternative could allow shocks to be administered
6 to any number of the competing players.

7
8 As a further alternative (or additional) feature, to
9 discourage the players from "false-starting" an electric
10 shock can be administered to any player that depresses
11 the switch prior to the output of the start signal.

12
13 As an optional additional feature, the apparatus may be
14 provided with means for setting the strength of the
15 electric shock administered. This can be achieved by any
16 suitable circuitry components, such as an arrangement of
17 variable resistors controlled by the electronics. In one
18 example, the strength of the electric shock is controlled
19 by a user selection of a "level", prior to the game
20 commencing. In an alternative example, the strength of
21 the electric shock can be incremented automatically over
22 a series of rounds. In a further example, the strength
23 of the electric shock could be selected at random,
24 between predetermined voltage thresholds.

25
26 Figure 4 shows an embodiment of the invention having the
27 same functional components as the embodiments of Figures
28 1 and 3, but with different external appearance.

29
30 It will be appreciated that alternative configurations
31 may be implemented within the scope of the invention
32 herein intended. For example, any number of handsets and
33 players above one can take part. The handsets themselves
34 could be configured in different manners. For example,

1 the electrodes could apply an electric shock to the
2 player by direct contact between the electrode and the
3 player. Alternatively, the casing of the handset may
4 have conductive properties, with the two part-casings
5 being insulated from one another. This would result in
6 the shock being administered to the player via the
7 casing.

8
9 In addition, the handsets could be replaced with contact
10 pads attached to, rather than held by, the player. In
11 particular, the electrodes could be secured to the
12 player.

13
14 Alternative arrangements for indicating start of a game
15 are also possible, for example, audio/visual countdowns.
16

17 Determination and comparison of reaction times could be
18 achieved by comparison with predetermined thresholds, as
19 an alternative or in addition to a direct comparison
20 between players.

21
22 The present invention provides an enhanced competitive
23 game and improved method of comparing and improving
24 performance of a physical task.

25

1 Claims

2

3 1. Game playing apparatus for a plurality of players,
4 the apparatus comprising: comparison means for
5 comparing the performance of a task by a plurality
6 of players and means for administering a
7 disincentive to one or more of said players.

8

9 2. Apparatus as claimed in Claim 1 further comprising
10 at least one contact element adapted to contact a
11 player, wherein the disincentive is a tangible
12 disincentive in the form of injury-free pain
13 administered via the at least one contact element.

14

15 3. Apparatus as claimed in Claim 2 wherein the
16 disincentive is a measured electric shock.

17

18 4. Apparatus as claimed in Claim 2 or Claim 3 wherein
19 at least one contact element is provided for each
20 player.

21

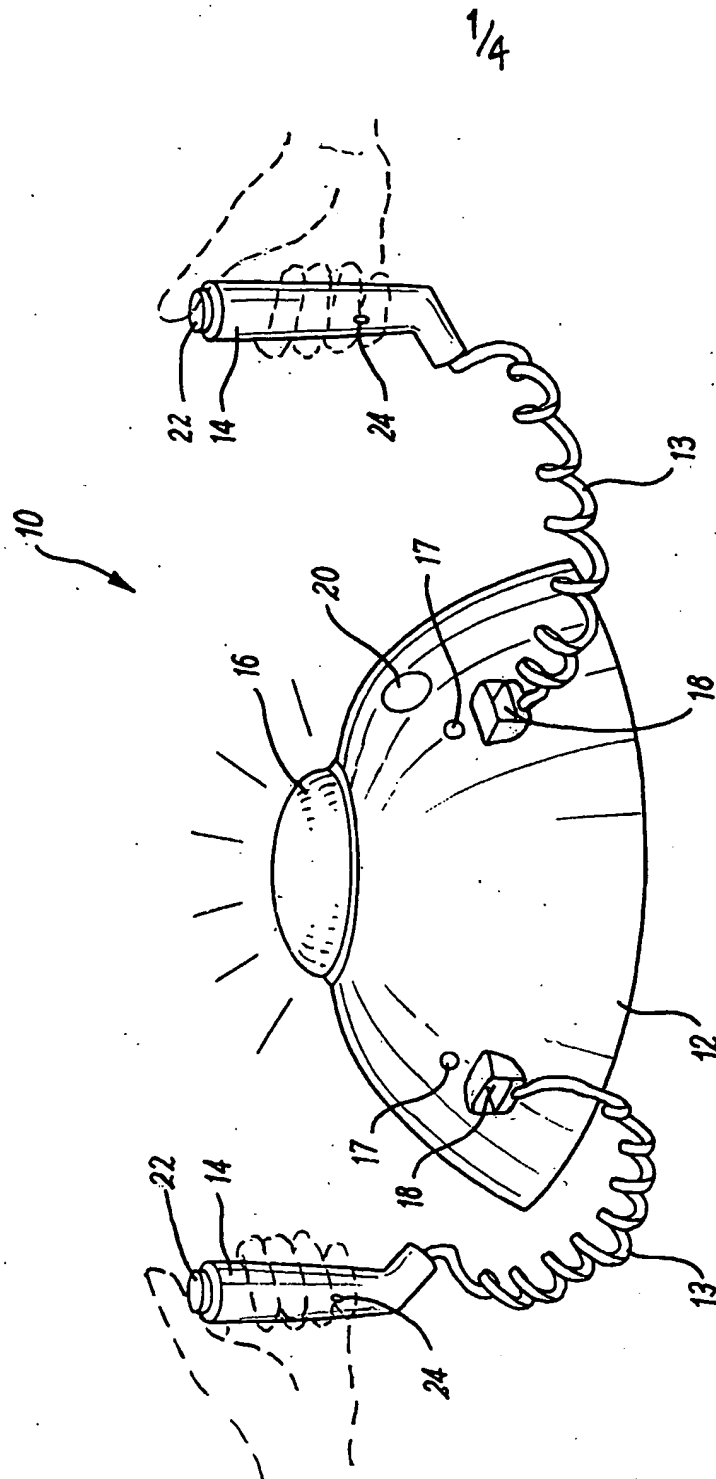
22 5. Apparatus for playing a competitive game between two
23 or more players, the apparatus comprising a
24 plurality of contact elements adapted to contact a
25 player, a plurality of player input devices adapted
26 to measure a player's performance of a particular
27 physical task, comparison means for comparing the
28 relative performance of the players at said physical
29 task, and means for administering a measured
30 electric shock to at least one player determined to
31 be less capable of the physical task.

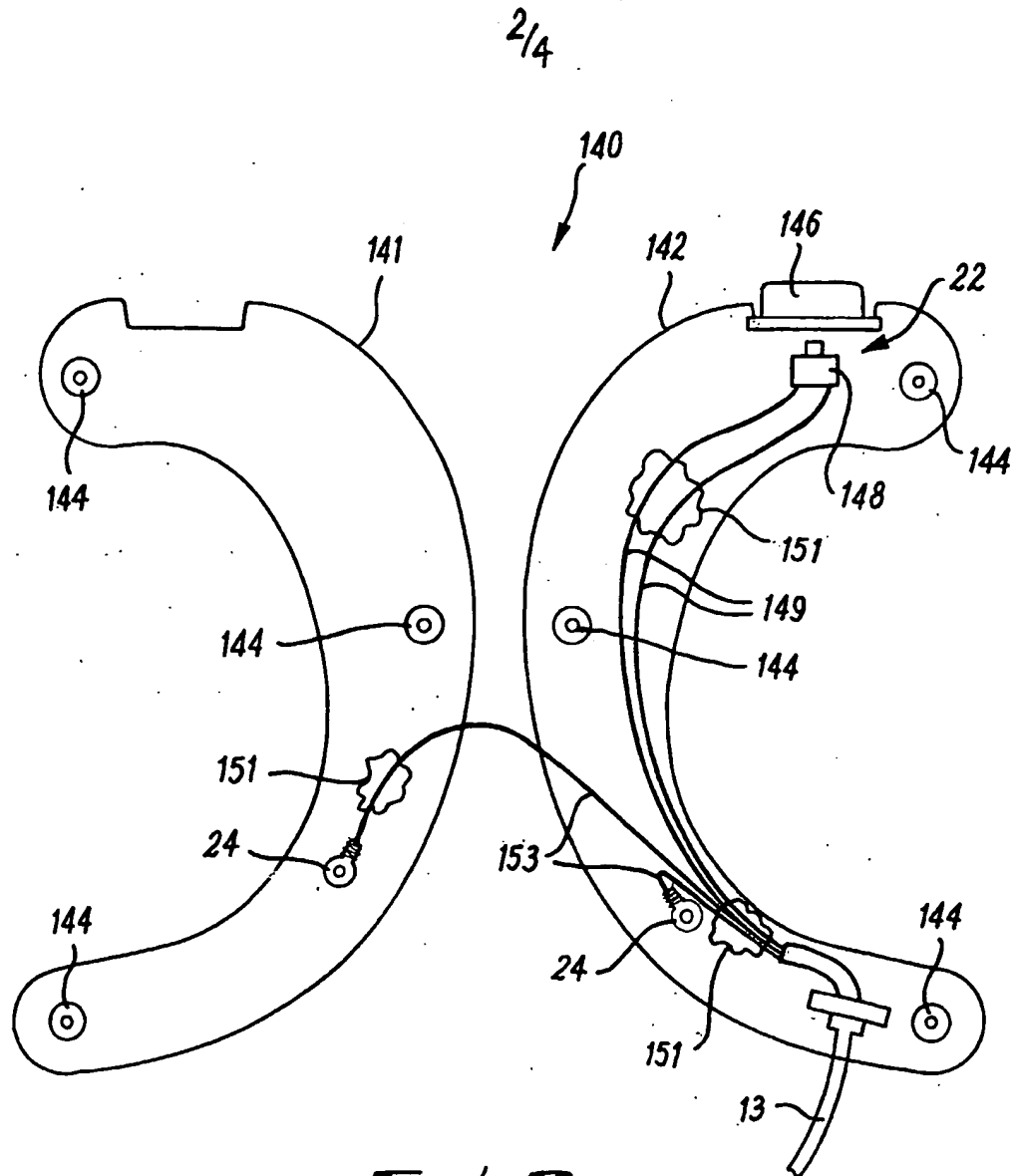
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- 1 6. Apparatus as claimed in any preceding Claim wherein
2 the contact element comprises a handset to be held
3 by a player.
4
- 5 7. Apparatus as claimed in any preceding Claim wherein
6 the contact element includes an electrode for
7 administering a measured electric shock to a player.
8
- 9 8. Apparatus as claimed in any preceding Claim further
10 comprising means for setting a voltage at which an
11 electric shock is administered.
12
- 13 9. Apparatus as claimed in Claim 8 comprising means for
14 enabling a user to set a voltage at which an
15 electric shock is administered.
16
- 17 10. Apparatus as claimed in Claim 8 or Claim 9
18 comprising means for automatically setting a voltage
19 at which an electric shock is administered.
20
- 21 11. Apparatus as claimed in any preceding Claim
22 comprising a plurality of player input devices
23 operable to be activated by a player and to provide
24 a signal to the comparing means.
25
- 26 12. Apparatus as claimed in any preceding Claim wherein
27 the player input devices are provided on the contact
28 elements.
29
- 30 13. Apparatus as claimed in any preceding Claim wherein
31 the apparatus includes a signal output device for
32 indicating a start signal to the players at a start
33 time.
34

- 1 14. Apparatus as claimed in Claim 13 wherein the signal
2 output device comprises a display.
3
- 4 15. Apparatus as claimed in Claim 13 or Claim 14 wherein
5 the signal output device comprises an audio device.
6
- 7 16. Apparatus as claimed in any preceding Claim wherein
8 the apparatus is adapted to compare reaction time of
9 the players, wherein reaction time is defined as the
10 time elapsed between the start time and the
11 activation of input devices corresponding to the
12 players.
13
- 14 17. Apparatus as claimed in any preceding Claim wherein
15 the apparatus is adapted to administer a measured
16 electric shock to a player determined as having a
17 longer reaction time than another player.
18
- 19 18. Apparatus as claimed in any preceding Claim wherein
20 the apparatus is be adapted to determine the longest
21 reaction time and administer a disincentive to the
22 player having the longest reaction time via the
23 corresponding contact element.
24
- 25 19. Apparatus as claimed in any preceding Claim wherein
26 the apparatus is be adapted to determine the
27 shortest reaction time and administer a disincentive
28 to the remaining players via the corresponding
29 contact elements.
30
- 31 20. Apparatus as claimed in any preceding Claim adapted
32 to administer a disincentive to a plurality of
33 players.

- 1 21: A method of improving reaction time of individuals,
2 comprising the steps of indicating a start time to a
3 plurality of individuals; comparing reaction time of
4 the individuals relative to one another, wherein
5 reaction time is defined as the time elapsed between
6 the start time and the activation of input devices
7 corresponding to the individuals, and administering
8 a measured electric shock to at least one individual
9 determined to have a longer reaction time relative
10 to at least one other individual.
11
- 12 22. The method as claimed in Claim 21 comprising the
13 steps of determining the longest reaction time and
14 administering a measured electric shock to the
15 player having the longest reaction time.
16
- 17 23. The method as claimed in Claim 21 or Claim 22
18 comprising the steps of determining the shortest
19 reaction time and administering a measured electric
20 shock to the remaining players.
21
- 22 24. The method as claimed in any of Claims 21 to 23
23 comprising the step of administering a measured
24 electric shock to a plurality of players.
25
- 26 25. The method as claimed in any of Claims 21 to 24
27 comprising the step of setting a voltage at which an
28 electric shock is administered.



**FIG. 2**

3/4

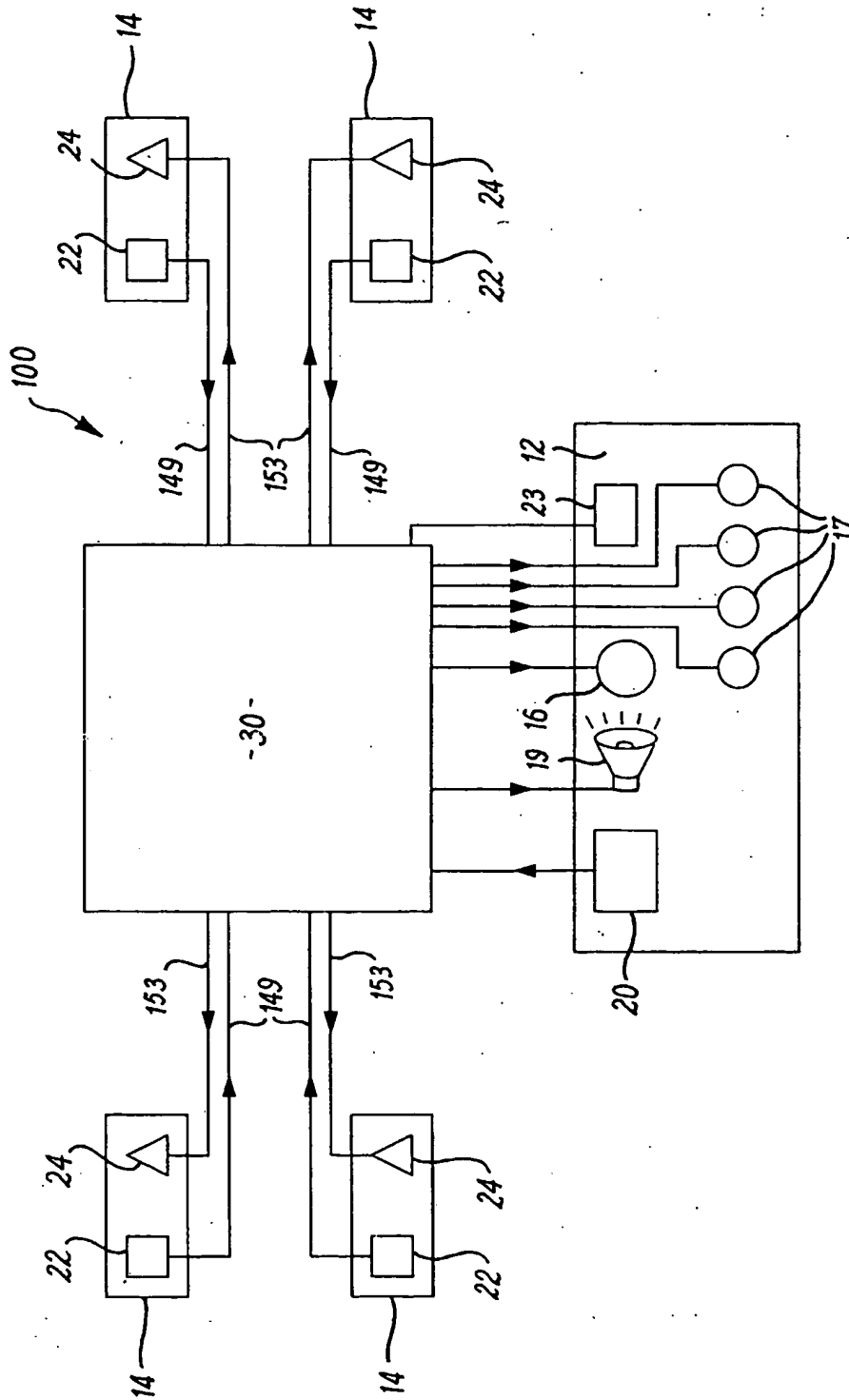
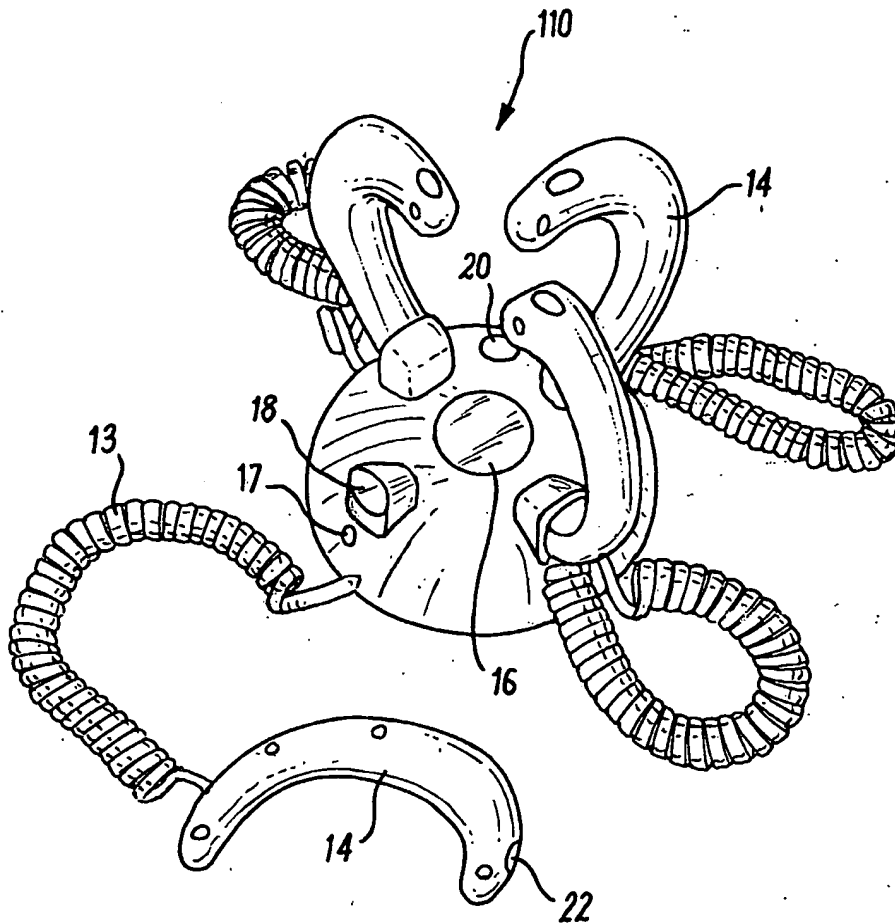


FIG. 3

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**FIG. 4**